pods, location of choke and kill lines, and associated valves;

(c) Independent third-party verification and supporting documentation that show the blind-shear rams installed in the BOP stack are capable of shearing any drill pipe (including workstring and tubing) in the hole under maximum anticipated surface pressure. The documentation must include actual shearing and subsequent pressure integrity test results for the most rigid pipe to be used and calculations of shearing capacity of all pipe to be used in the well, including correction for Maximum Anticipated Surface Pressure (MASP);

(d) When you use a subsea BOP stack, independent third-party verification that shows:

(1) The BOP stack is designed for the specific equipment on the rig and for the specific well design;

(2) The BOP stack has not been compromised or damaged from previous service;

(3) The BOP stack will operate in the conditions in which it will be used; and

(e) The qualifications of the independent third-party referenced in paragraphs (c) and (d) of this section including evidence that:

(1) The independent third-party in this section is a technical classification society, or a licensed professional engineering firm, or a registered professional engineer capable of providing the verifications required under this part.

(2) You must:

(i) Include evidence that the registered professional engineer, or a technical classification society, or engineering firm you are using or its employees hold appropriate licenses to perform the verification in the appropriate jurisdiction, and evidence to demonstrate that the individual, society, or firm has the expertise and experience necessary to perform the required verifications.

(ii) Ensure that an official representative of BSEE will have access to the location to witness any testing or inspections, and verify information submitted to BSEE. Prior to any shearing ram tests or inspections, you must notify the BSEE District Manager at least 72 hours in advance.

[77 FR 50897, Aug. 22, 2012]

§ 250.1706 What are the requirements for blowout prevention equipment?

If you use a BOP for any well abandonment operations, your BOP must meet the following requirements:

(a) The BOP system, system components, and related well-control equipment must be designed, used, maintained, and tested in a manner necessary to assure well-control in foreseeable conditions and circumstances, including subfreezing conditions. The working pressure rating of the BOP system and system components must exceed the expected surface pressure to which they may be subjected. If the expected surface pressure exceeds the rated working pressure of the annular preventer, you must submit with Form BSEE–0124, requesting approval of the well abandonment operations, a well-control procedure that indicates how the annular preventer will be utilized, and the pressure limitations that will be applied during each mode of pressure control.

(b) The minimum BOP system for well abandonment operations with the tree removed must meet the appropriate standards from the following table:

When . . .	The minimum BOP stack must include . . .
(1) The expected pressure is less than 5,000 psi,	Three BOPs consisting of an annular, one set of pipe rams, and one set of blind-shear rams.
(2) The expected pressure is 5,000 psi or greater or you use multiple tubing strings,	Four BOPs consisting of an annular, two sets of pipe rams, and one set of blind-shear rams.
(3) You handle multiple tubing strings simultaneously,	Four BOPs consisting of an annular, one set of pipe rams, one set of dual pipe rams, and one set of blind-shear rams.
(4) You use a tapered drill string,	(i) At least one set of pipe rams that are capable of sealing around each size of drill string. (ii) If the expected pressure is greater than 5,000 psi, then you must have at least two sets of pipe rams that are capable of sealing around the larger size drill string. (iii) You may substitute one set of variable bore rams for two sets of pipe rams.

When . . .	The minimum BOP stack must include . . .
(5) You use a subsea BOP stack,	The requirements in § 250.442(a) of this part.

(c) The BOP systems for well abandonment operations with the tree removed must be equipped with the following:

(1) A hydraulic-actuating system that provides sufficient accumulator capacity to supply 1.5 times the volume necessary to close all BOP equipment units with a minimum pressure of 200 psi above the precharge pressure without assistance from a charging system. Accumulator regulators supplied by rig air and without a secondary source of pneumatic supply, must be equipped with manual overrides, or alternately, other devices provided to ensure capability of hydraulic operations if rig air is lost;

(2) A secondary power source, independent from the primary power source, with sufficient capacity to close all BOP system components and hold them closed;

(3) Locking devices for the pipe-ram preventers;

(4) At least one remote BOP-control station and one BOP-control station on the rig floor; and

(5) A choke line and a kill line each equipped with two full opening valves and a choke manifold. At least one of the valves on the choke-line must be remotely controlled. At least one of the valves on the kill line must be remotely controlled, except that a check valve on the kill line in lieu of the remotely controlled valve may be installed, provided two readily accessible manual valves are in place and the check valve is placed between the manual valves and the pump. This equipment must have a pressure rating at least equivalent to the ram preventers. You must install the choke line above the bottom ram and may install the kill line below the bottom ram.

(d) The minimum BOP system components for well abandonment operations with the tree in place and performed through the wellhead inside of conventional tubing using small-diameter jointed pipe (usually ¾ inch to 1¼ inch) as a work string, *i.e.*, small-tubing operations, must include the following:

(1) Two sets of pipe rams, and

(2) One set of blind rams.

(e) The subsea BOP system for well abandonment operations must meet the requirements in § 250.442 of this part.

(f) For coiled tubing operations with the production tree in place, you must meet the following minimum requirements for the BOP system:

(1) BOP system components must be in the following order from the top down:

BOP system when expected surface pressures are less than or equal to 3,500 psi	BOP system when expected surface pressures are greater than 3,500 psi	BOP system for wells with returns taken through an outlet on the BOP stack
(i) Stripper or annular-type well-control component,	Stripper or annular-type well-control component,	Stripper or annular-type well-control component.
(ii) Hydraulically-operated blind rams,	Hydraulically-operated blind rams,.	Hydraulically-operated blind rams.
(iii) Hydraulically-operated shear rams,	Hydraulically-operated shear rams,.	Hydraulically-operated shear rams.
(iv) Kill line inlet,	Kill line inlet,	Kill line inlet.
(v) Hydraulically-operated two-way slip rams,	Hydraulically-operated two-way slip rams,	Hydraulically-operated two-way slip rams.
(vi) Hydraulically-operated pipe rams,	Hydraulically-operated pipe rams.	Hydraulically-operated pipe rams.
	Hydraulically-operated blind-shear rams. These rams should be located as close to the tree as practical,	A flow tee or cross.
		Hydraulically-operated pipe rams.
		Hydraulically-operated blind-shear rams on wells with surface pressures >3,500 psi. As an option, the pipe rams can be placed below the blind-shear rams. The blind-shear rams should be located as close to the tree as practical.

(2) You may use a set of hydraulically-operated combination rams for the blind rams and shear rams.

(3) You may use a set of hydraulically-operated combination rams for the hydraulic two-way slip rams and the hydraulically-operated pipe rams.

(4) You must attach a dual check valve assembly to the coiled tubing connector at the downhole end of the coiled tubing string for all coiled tubing well abandonment operations. If you plan to conduct operations without downhole check valves, you must describe alternate procedures and equipment in Form BSEE–0124, Application for Permit to Modify, and have it approved by the BSEE District Manager.

(5) You must have a kill line and a separate choke line. You must equip each line with two full-opening valves and at least one of the valves must be remotely controlled. You may use a manual valve instead of the remotely controlled valve on the kill line if you install a check valve between the two full-opening manual valves and the pump or manifold. The valves must have a working pressure rating equal to or greater than the working pressure rating of the connection to which they are attached, and you must install them between the well-control stack and the choke or kill line. For operations with expected surface pressures greater than 3,500 psi, the kill line must be connected to a pump or manifold. You must not use the kill line inlet on the BOP stack for taking fluid returns from the wellbore.

(6) You must have a hydraulic-actuating system that provides sufficient accumulator capacity to close-open-close each component in the BOP stack. This cycle must be completed with at least 200 psi above the precharge pressure, without assistance from a charging system.

(7) All connections used in the surface BOP system from the tree to the uppermost required ram must be flanged, including the connections between the well-control stack and the first full-opening valve on the choke line and the kill line.

(g) The minimum BOP system components for well abandonment operations with the tree in place and performed by moving tubing or drill pipe in or out of a well under pressure utilizing equipment specifically designed for that purpose, *i.e.*, snubbing operations, must include the following:

(1) One set of pipe rams hydraulically operated, and

(2) Two sets of stripper-type pipe rams hydraulically operated with spacer spool.

(h) An inside BOP or a spring-loaded, back-pressure safety valve, and an essentially full-opening, work-string safety valve in the open position must be maintained on the rig floor at all times during well abandonment operations when the tree is removed or during well abandonment operations with the tree installed and using small tubing as the work string. A wrench to fit the work-string safety valve must be readily available. Proper connections must be readily available for inserting valves in the work string. The full-opening safety valve is not required for coiled tubing or snubbing operations.

[77 FR 50897, Aug. 22, 2012]

§ 250.1707 What are the requirements for blowout preventer system testing, records, and drills?

(a) *BOP pressure tests.* When you pressure test the BOP system, you must conduct a low-pressure test and a high-pressure test for each component. You must conduct the low-pressure test before the high-pressure test. For purposes of this section, BOP system components include ram-type BOP's, related control equipment, choke and kill lines, and valves, manifolds, strippers, and safety valves. Surface BOP systems must be pressure tested with water.

(1) *Low pressure tests.* You must successfully test all BOP system components to a low pressure between 200 and 300 psi. Any initial pressure equal to or greater than 300 psi must be bled back to a pressure between 200 and 300 psi before starting the test. If the initial pressure exceeds 500 psi, you must bleed back to zero before starting the test.

(2) *High pressure tests.* You must successfully test all BOP system components to the rated working pressure of the BOP equipment, or as otherwise approved by the BSEE District Manager.